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**BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, D.C. 20554**

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**FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY**

In the Matter of)
)
Implementation of Section 304 of)
the Telecommunications Act of 1996)
)
Commercial Availability of)
Navigation Devices)

CS Docket No. 97-80

REPLY COMMENTS OF TELE-COMMUNICATIONS, INC.

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REPLY COMMENTS OF TELE-COMMUNICATIONS, INC.

Tele-Communications, Inc. ("TCI"), by its attorneys, hereby files its reply comments on the Notice of Proposed Rulemaking in the above-captioned proceeding.¹

I. INTRODUCTION AND SUMMARY

In these reply comments, TCI supports those commenters who advocate that Section 629 only requires the Commission to adopt general rules to ensure that consumers may purchase certain types of navigation devices from a source other than the MVPD itself. Congress did not dictate the means by which the Commission must achieve "commercial availability." It did, however, impose two strict parameters on what the Commission may not do: 1) the Commission must avoid stifling the development of new technologies and services; and 2) the Commission may not compromise the security

¹ In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices, Notice of Proposed Rulemaking, CS Docket No. 97-80, FCC 97-53 (released February 20, 1997) ("Notice").

of MVPD networks. These two restrictions preclude the Commission from adopting rigid, mandatory technical or other requirements to facilitate commercial availability because such requirements would stifle innovation and threaten MVPD security. This is particularly so because the rapid and unpredictable evolution of the MVPD industry make it impossible for any static commercial availability requirements to keep up with the marketplace. Moreover, rigid, mandatory commercial availability regulations are unnecessary. The Commission can more appropriately achieve Congress' goals by:

- Adopting a straightforward definition of commercial availability that ensures consumers the ability to purchase equipment from a source unaffiliated with the MVPD; and
- Establishing a performance rule, under which MVPDs would be afforded the flexibility to determine precisely how to meet the requirements of that definition.

II. THE COMMISSION SHOULD: 1) ADOPT A DEFINITION OF COMMERCIAL AVAILABILITY THAT REQUIRES THAT CONSUMERS HAVE THE OPTION TO PURCHASE EQUIPMENT FROM A SOURCE OTHER THAN THE MVPD; AND 2) PERMIT MVPDS FLEXIBILITY TO DETERMINE HOW TO SATISFY THAT REQUIREMENT.

A. The Commission Should Adopt A Definition of Commercial Availability That Ensures Consumers The Option To Purchase Equipment From a Source Other Than The MVPD.

A complex and detailed set of commercial availability regulations would not only disserve the public interest, it would be contrary to the express terms of Section 629. Moreover, it is entirely unnecessary.

Rather, TCI supports those commenters² who advocate that Section 629 simply requires that consumers have an alternative to the MVPD for the purchase of equipment.³ Section 629 does not specify how this requirement must be met. Thus, commercial availability depends solely on the ability of consumers to purchase equipment from a source other than the MVPD. So long as that ability is ensured, the Commission will have satisfied its obligations under Section 629. For these reasons, TCI generally supports the definition of "commercial availability" proposed by General Instrument.⁴

TCI opposes those commenters who suggest that multiple retailers must exist for the commercial availability standard to be satisfied, or that national portability, government-mandated

² See, e.g., Comments of Cellularvision USA, Inc. at 9; Comments of General Instruments Corp. ("GI") at 15-19; Comments of GTE at 8 (stating that commercial availability does not require that CPE be made available by retailers or manufacturers not selected by MVPDs); Comments of National Cable Television Association ("NCTA") at 21; Comments of PRIMESTAR Partners L.P. at 20 (the Commission need only adopt a requirement that the MVPD not be the sole available source of its navigation equipment in order to satisfy the mandate of the statute); Comments of Time Warner at 27 (the Commission should not require that there be a certain number of outlets, but just the ability to purchase or lease equipment from an unaffiliated manufacturer, retailer, or vendor); Comments of U.S. West at 13 (defining commercial availability as the presence of at least two unaffiliated CPE providers, one of which can be the MVPD).

³ Section 629 is intended to "ensure that consumers are not forced to purchase or lease a specific, proprietary converter box, interactive device or other equipment from the cable system or network operator." S. Conf. Rep. 230, 104th Cong., 2nd Sess. 181 (1996) ("Conference Report").

⁴ See Comments of GI at 15.

standards, or compulsory licensing of proprietary technology is required.⁵ Not only are such intrusive regulations beyond the scope of Section 629, they are unwise as a policy matter because they will discourage manufacturers and MVPDs from continuing to invest in innovative technologies. Such interventionist government activity is particularly unwarranted given the fact that industry efforts and market forces already are producing standards, licensing, and portability where it is economically efficient and pro-consumer to do so.⁶

B. The Commission Should Not Specify A Particular Method Of Satisfying The Definition Of Commercial Availability.

There is no need for the Commission to dictate the precise manner in which an MVPD meets the requirement of commercial availability. Rather, the Commission should adopt its proposal in the Notice to simply establish a performance rule for achieving commercial availability by a date certain.⁷ Under such a performance rule, advocated by numerous commenters,⁸ the commercial

⁵ See, e.g., Comments of Consumer Electronics Retailers Coalition at 8-10, 15-34.

⁶ See, e.g., Comments of GI at 36-37; Comments of TIA at 9-11; Comments of Scientific Atlanta at 11.

⁷ Notice at ¶ 67.

⁸ See, e.g., Comments of Ad Hoc Computer and High-Technology Coalition at 10 (noting that the Commission should pursue a performance rule approach by setting a goal and allowing the industry to get there in the most efficient way); Comments of Echelon Corporation at 31-33 (agreeing with a performance standard that does not specify how MVPDs or cable operators must satisfy the retail availability obligation); Comments of GI at 49-52 (proposing a "PRIME" approach that uses performance rules and incentive mechanisms applied to specific equipment over time); Comments of NCTA at 30-32 (noting that a performance-rule approach is the best
(continued...))

availability requirement could be satisfied through any reasonable means, including, for example, separation of security and non-security components under which the non-security components are provided at retail,⁹ or an agreement under which a manufacturer supplies (or licenses another to supply) the same integrated equipment to both the MVPD and to a retailer that is unaffiliated with the MVPD. In short, if commercial availability is achieved, the Commission should be indifferent to the means of achievement.

1. **MVPD technology is evolving at such a rapid pace that any attempt to impose a detailed, mandatory method of achieving commercial availability would stifle growth and innovation.**

The legislative history of Section 629 states that "[t]he conferees intend that the Commission avoid actions which could have the effect of freezing or chilling the development of new technologies and services."¹⁰ In fact, Congress' goal "to accelerate rapidly private sector deployment of advanced

(...continued)
option); Comments of The Telecommunications Industry Association ("TIA") at 12-13 (the Commission should promulgate a performance rule without specifying how MVPDs or cable operators must satisfy the retail availability obligation).

⁹ Of course, under this option, MVPDs would be able to offer both features modules and integrated units, as long as they make a security-only module available to their subscribers. This issue has already been decided by the Commission. See Memorandum Opinion and Order, 11 F.C.C.R. 4121, 4127 (1996) ("[W]e see no need to preclude cable operators from also incorporating signal access control functions in multi-function component devices that connect to the Decoder Interface connection."). See also Comments of NCTA at 3, 28-30; Comments of GI at 51 and Appendix A, at 17-19.

¹⁰ Conference Report at 181.

telecommunications and information technologies . . ."¹¹ is stressed throughout the 1996 Act.¹²

The Commission cannot satisfy this goal and, at the same time, adopt detailed commercial availability regulations that significantly restrict the way in which an MVPD offers consumer equipment. This is because the MVPD marketplace is evolving so rapidly that any effort to micromanage its development by locking MVPDs into a particular manner of providing consumer equipment will necessarily limit growth and innovation.

Both Congress¹³ and the Commission¹⁴ have observed the plain fact that the MVPD marketplace is undergoing remarkably accelerated change. The growth of video programming, the number of service

¹¹ Id. at 1.

¹² See, e.g., 1996 Act House Report at 107 ("[Section 301(j) (equipment averaging)] is intended to "promote the development of a broadband, two-way telecommunications infrastructure"); 1996 Act, § 706(a) ("The Commission and each State commission with regulatory jurisdiction over telecommunications services shall encourage the deployment on a reasonable and timely basis of advanced telecommunications capability to all Americans"); H.R. Rep. No. 104-204, 104th Cong., 1st Sess. 112 at 107 (1995) ("House Report") ("The Committee finds that current Commission regulations do not adequately encourage deployment of digital technology") (referring to 1996 Act, § 202(a)); House Report at 110 ("The Committee finds that the patchwork of regulations that would result from a locality-by-locality approach is particularly inappropriate in today's intensely dynamic technological environment.") (referring to 1996 Act, § 301(e)).

¹³ House Report at 55 (The MVPD marketplace has experienced a veritable "explosion of video distribution technologies.").

¹⁴ Revision of Rules and Policies for the Direct Broadcast Satellite Service, Report and Order, 11 F.C.C.R. 9712, 9736 (1995) ("[T]he [MVPD] marketplace is undergoing dynamic change.").

providers, and the technologies for providing video have grown significantly. Perhaps the best example of the dynamic nature of the MVPD marketplace is the fundamental conversion from analog to digital transmission. The cable industry is moving rapidly to implement digital.¹⁵ Similarly, the Commission earlier this year gave broadcasters an additional 6 MHz of spectrum to offer new digital services and, by 2006, to transform the current analog broadcast system to digital. Digital transmission, coupled with compression, not only substantially increases the number of services MVPDs can offer consumers, it improves video and audio signal quality, increases interactivity, enhances system security, provides consumers' greater ability to find and select programming, and facilitates convergence with computer processing and various multimedia technologies.

Multimedia convergence, no longer merely a buzz word, also is transforming the MVPD marketplace. Cable operators, computer hardware manufacturers, computer software developers, and others are beginning to apply the processing power of the computer to video.¹⁶ This portends a new kind of service, one in which the

¹⁵ See, e.g., Comments of GI at 36-37 (noting cable industry coalition is developing digital transmission and cable modem standards); Comments of Scientific-Atlanta at 11 (cable industry has developed a voluntary private industry standard to facilitate greater interoperability and portability in the cable modem market); Comments of NCTA at 30-35.

¹⁶ See also Comments of The Ad Hoc Computer and High-Technology Coalition at 6-7 (noting that personal computer manufacturers are marketing large computer monitors that incorporate both TV receivers and remote control capabilities).

consumer can manipulate video programming, combine video with high speed data applications, and play a more central role in defining the video experience.

These developments reflect the fact that the marketplace is evolving in a manner that is changing the way consumers receive and use video and other informational programming. Consumer equipment is the fulcrum at which consumers turn the promise of new technology into practical reality. If the consumer equipment pipeline is disrupted by regulations which unnecessarily restrict the way in which this equipment is developed and distributed, the benefits of innovation could be lost.

Moreover, the risk that misguided regulations could curtail marketplace growth is magnified by the fact that changes in the MVPD marketplace are occurring at an extraordinarily rapid pace. Any rigid regulations the Commission were to adopt today would be swiftly overwhelmed by marketplace developments.

This problem of regulatory lag is heightened by the fact that consumer purchasing patterns are changing. Increasingly, consumers make purchasing decisions independent of geographic limitations. For example, Gateway 2000 has become one of the largest sellers of personal computer systems nationwide by offering consumers the option of purchasing computers via telephone or the Internet from Gateway's manufacturing plant in South Dakota.¹⁷ Similarly, sales

¹⁷ In the first quarter of 1997, for example, Gateway shipped 452,000 units for a 6.5% share of the domestic market, a jump in sales of 35% over the same period last year. Martyn Williams, "First Quarter US and World PC Shipments Surged Says International Data Corporation," NewsBytes, April 28, 1997. One
(continued...)

from catalogs and home shopping channels continue to skyrocket.¹⁸ Consumer purchases via the Internet "have zoomed, from zero two years ago to an estimated \$560 million in 1996. . . ."¹⁹ As this shift from producer-controlled to demand-controlled markets accelerates, consumers' notion of "commercial availability" will be a constantly moving target.

In such an environment, where the dynamic variables of technology, service, and consumer preference are continuously interacting and readjusting, the Commission cannot possibly predict how the market will operate in the short term, let alone over the next ten or fifteen years. To the extent a narrow, mandatory scheme does not exactly fit the evolution of technology and competition, innovation and competition will be dampened.

Microsoft Chairman Bill Gates recently underscored this point, observing that the highly fluid state of technology counsels against unnecessary government involvement in the set-top box business:

Because the set-top box is in every sense a computer, it stands to reason it will follow the

(...continued)

fund manager anticipates Gateway's revenues for 1997 to be \$6.3 billion. See Carla Fried, "These Funds Refuse to Lose," Money, May 1997, at 98. See also Comments of Gateway 2000, Inc. (arguing that the sale of MVPD navigation devices under a direct, telephone or online-based distribution model constitutes commercial availability under Section 629).

¹⁸ See, e.g., Nicholas K. Geranios, "Idaho Mail Order Firm Sells Romance Along with \$12 Pencils," L.A. Times, May 4, 1997, at B4 (describing \$100-billion U.S. catalog industry).

¹⁹ Alina Matas, "Internet Retail Sales Rang up \$560M," The Record, May 5, 1997, at H11.

same pattern of rapid innovation that has driven the PC industry. In fact, the set-top box will be sold to a far more uncertain market than the PC was, so the case for letting it be market driven is even stronger. It would be foolish to impose the constraint of government-dictated design on an unfinished invention. . . . [I]f we don't watch out, [government] constraints could strangle the market.²⁰

Rigid regulations are simply inconsistent with the constantly evolving MVPD technology. By nature, the former produces a static environment, and yet the latter requires flexibility.

In the context of Section 629, this means that the Commission should only require that Congress' desire for commercial availability is achieved. It should not attempt to dictate the precise manner in which it is achieved.

2. **The Commission may not adopt rigid, mandatory commercial availability requirements because doing so would violate Section 629's express prohibition against rules which jeopardize signal security.**

As the Commission and other commenters note, signal theft continues to grow.²¹ It is estimated that the cable industry lost \$6 billion to signal theft in 1996, with the sale of illegal converter boxes continuing to be a \$1 billion a year industry.²² "Indeed, today's black-box pirates are more sophisticated and

²⁰ Bill Gates, The Road Ahead 234-235 (The Penguin Group 1995) (emphasis added).

²¹ Notice at ¶ 31. See also Comments of GI at 58-59 (discussing piracy problems associated with British Sky Broadcasting's use of smart-card technology); Comments of NCTA at 10 (discussing piracy of analog boxes).

²² "PPV Piracy Sting Operation Planned for Tyson-Holyfield," Media Daily, April 8, 1997, at 1.

organized than ever, selling boxes in bulk through tiers of distributors who, in turn, advertise descramblers on the Internet and in newspapers and magazines."²³ As the cable industry begins to provide new, interactive services, this piracy problem will become more acute. For example, pay-per-view services have proven particularly vulnerable to signal theft, losing an estimated \$45 million in revenues in 1996.²⁴ As industry experts have noted, "'for every one person who buys a pay-per-view event, two get it for free through piracy.'"²⁵ Nor is this security concern limited to the cable industry. As has been well documented, problems of signal theft have been "plaguing the [DBS] industry since its inception."²⁶

In recognition of this problem, Congress expressly prohibited the Commission from adopting rules which jeopardize signal security:

The Commission shall not prescribe regulations under subsection (a) which would jeopardize security of multichannel video programming and other services offered over multichannel video programming systems, or impede the legal rights of

²³ Mark Robichaux, "Cable Pirates Sought Plunder But Blundered Into Major FBI Sting," Wall Street Journal, May 12, 1995, at A1.

²⁴ "Big Tyson Fight Numbers Can't Mask Pay-Per-View Competitive Problems," Interactive Video News, November 25, 1996, at 1.

²⁵ "Tyson KO Is OK With PPV," Broadcasting & Cable, March 25, 1996, at 63 (quoting Barry Gould, co-owner of Gould Media Services of York, Maine).

²⁶ "Special Report -- DBS Continues On Its Roll; Problems Ahead?," Satellite News, July 1, 1996, at 1.

a provider of such services to prevent theft of service.²⁷

In the Notice, the Commission suggests that a potential solution to commercial availability is to separate the security portion of the equipment from the non-security functions.²⁸ The Commission and other commenters²⁹ recognize that there may be significant piracy problems associated with such an approach.³⁰ While it is possible that separations could play an important role in achieving commercial availability, the Commission is correct to proceed cautiously in this area. Although non-embedded security may offer significant promise, to date certain non-embedded systems, such as smart cards, have proven relatively easy to breach. For example, in May 1994, BSKyB replaced three million smart cards at a cost of \$15 - \$20 million. These replacement

²⁷ 47 U.S.C. § 549(b) (emphasis added). The House and Committee Reports echoed a similar refrain. See House Report at 112 ("Section [629] specifically recognizes that cable and other telecommunications system operators have a valid interest, which the Commission should continue to protect, in system or signal security and in preventing theft of service. Section [629] directs the Commission to take this interest into account in developing its regulations."); Conference Report at 181 ("[T]he Commission may not prescribe regulations which would jeopardize signal security or impede the legal rights of a provision to preempt theft of service.") (emphasis added).

²⁸ See Notice at ¶ 72.

²⁹ See, e.g., Comments of GI at 58-59 (discussing smart-card technology).

³⁰ See Notice at ¶ 75 ("We recognize that in the current analog environment there may be significant problems with separating security functions from other functions of converter boxes.")

smart-cards were breached within the year.³¹ Similarly, in November 1995, "U.S. customs officials had arrested a man entering the U.S. at Blaine, Washington state . . . carrying 113 pirate access cards. The 113 cards were designed to penetrate DirecTV's DSS system."³² A piracy consulting firm, Shelton and Associates, estimated that as of early 1996, "between 5,000 and 10,000 illegal smart cards are in circulation in North America . . . This number, however, is only a drop in the ocean compared to what will happen soon."³³

These kinds of problems could be exacerbated if the Commission attempts to mandate a separations solution over a large number of systems and subscribers. Piracy is simply a matter of economics. The larger the potential subscriber base, the more likely theft is to be lucrative. As one observer recently stated: "In the same way that a monoculture is more vulnerable to pests than a diverse ecology, a single encryption standard would be far more vulnerable

³¹ William Mahoney, "To Catch a Thief," Multichannel News, April 3, 1995, at 18B.

³² "Walking a Plank," Cable and Satellite Europe, April 1996, at 88. Though "DBS piracy is a little like the black sheep in the family -- no one seems to want to talk about it," it does exist. *Id.* In addition to the incident in Washington, in July the Royal Canadian Mounted Police completed a seven month long investigation into a pirate ring "accused of manufacturing and distributing cloned DirecTV access cards . . . As a result of the investigation, DirecTV and News Datacom are laying civil charges against 22 individuals." "Pirate Ring Walks the Plank," Cable and Satellite Express, July 4, 1996, at 10.

³³ "Walking a Plank," Cable and Satellite Europe, April 1996, at 88.

to piracy than the mosaic of different schemes used by cable networks today."³⁴

In a recent treatise, Walter S. Ciciora summarized the uphill battle faced by MVPDs:

It is impossible to guarantee that a signal security system cannot be breached. Signal security is a running battle between the engineers creating the system and those who wish to defeat it. This is not an even match. The designers have a limited budget, a restricted staff, a short time to design the product, and the mature technology of the day to utilize for implementation. Those who would attach the signal security system have unlimited time, arbitrarily large numbers of participants, and an evolving technology . . . truly massive computing power will be available to 'hackers' at very affordable prices.³⁵

Moreover, even if a non-embedded security system were unbreachable on a permanent basis due to its ever changing nature, the cost of maintaining such security on an ongoing basis could be extraordinary. Effective smart-cards cost about \$30-40 apiece.³⁶ "Sending out new cards to all customers every time signal security is breached would become a prohibitive recurring cost."³⁷

³⁴ Charles Platt, "Satellite Pirates," Wired, Aug. 1994, at 127 (also stating that if a single smart-card standard is ever introduced into the satellite industry video pirates will be motivated to break its encryption code at almost any cost).

³⁵ Walter S. Ciciora, Ph.D., "The Realities of the Retail Sale of 'Navigation Devices'," 1996 NCTA Technical Papers, 417, 419, 425 (1996).

³⁶ Decker Anstrom, President and CEO of NCTA, Prepared Testimony before the U.S. Senate Committee on the Judiciary at Appendix D (May 3, 1995).

³⁷ Id.

TCI does not contend that separation of security and non-security functions is unworthy of further consideration or that such an approach has no role in achieving commercial availability. Indeed, the cable industry is exploring a technology solution using a separation approach (i.e., the National Renewable Security Standard ("NRSS")) to facilitate commercial availability of navigation devices. However, there have been demonstrated problems with separations, and neither TCI nor the Commission can accurately predict whether and to what extent these problems will be overcome in the future.

As a result, the Commission should not require that a separations approach or any other particular technology solution be used by MVPDs to achieve commercial availability for navigation devices that include security technology. Such a mandatory approach would constrain MVPDs from responding to signal piracy in direct contravention of the express language of Section 629(b). Rather, as described above, the Commission should recognize separation of security and non-security functions as one possible method of achieving commercial availability, but permit other reasonable methods (e.g., the availability of integrated navigation devices, including embedded security components, through a vendor unaffiliated with the MVPD) to satisfy the commercial availability standard under Section 629.

CONCLUSION

For the foregoing reasons, TCI respectfully requests the Commission to adopt rules under Section 629 consistent with the comments herein.

Respectfully submitted,

TELE-COMMUNICATIONS, INC.

A handwritten signature in dark ink, appearing to read "Michael H. Hammer", is written over a horizontal line.

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